



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF APPEALS AND INTERFERENCES

DN A01098A

In re application of  
Pankaj Vinubhai Shah.

Paper No.: 11

Serial No. 09/927,009

Group Art Unit: 1733

Filed: August 9, 2001

Examiner: J.L. Goff II

For: METHOD FOR FORMING A HOT MELT ADHESIVE

Commissioner for Patents  
Alexandria, VA 22313-1450

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*Donald D. Hoke*



# FEE TRANSMITTAL for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ ) 330.00

## Complete if Known

Application Number	09/927,009
Filing Date	August 9, 2001
First Named Inventor	Shah
Examiner Name	J.L. Goff II
Art Unit	1733
Attorney Docket No.	A01098A

## METHOD OF PAYMENT (check all that apply)

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## FEE CALCULATION

### 1. BASIC FILING FEE

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1001	770	2001	385	Utility filing fee	
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1) (\$ )

### 2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

		Extra Claims		Fee from below	Fee Paid
Total Claims	<input type="text"/>	-20** =	<input type="text"/>	X	<input type="text"/>
Independent Claims	<input type="text"/>	- 3** =	<input type="text"/>	X	<input type="text"/>
Multiple Dependent					<input type="text"/>

Large Entity		Small Entity		Fee Description
Fee Code	Fee (\$)	Fee Code	Fee (\$)	
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) (\$ )

\*\*or number previously paid, if greater; For Reissues, see above

## FEE CALCULATION (continued)

### 3. ADDITIONAL FEES

Large Entity Small Entity

Fee Code	Fee (\$)	Fee Code	Fee (\$)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for ex parte reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	330.00
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify)

\*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$ ) 330.00

## SUBMITTED BY

(Complete if applicable)

Name (Print/Type)	RONALD D. BAKULE	Registration No. (Attorney/Agent)	32,681	Telephone	215-641-7822
Signature	<i>Ronald D. Bakule</i>	Date	April 2, 2004		

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GROUP ART UNIT: 1733

APPEAL NO.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF APPEALS AND INTERFERENCES

APPELLANT'S BRIEF

Pankaj Vinubhai Shah

Application for Patent Filed August 9, 2001

Serial No. 09/927,009

METHOD FOR FORMING A HOT MELT ADHESIVE

Ronald D. Bakule  
Agent for Appellant

J.L. Goff II  
Examiner

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BRIEF FOR APPELLANTS

This is an appeal from the final rejection by the Examiner of November 4, 2003 rejecting claims 1-4. Appellants filed a Notice of Appeal pursuant to 37 C.F.R. 1.191 on February 4, 2004.

An authorization to charge payment of the fee for the filing of the Appeal Brief to Deposit Account 18-1850 is also enclosed.



#### REAL PARTY IN INTEREST [37 C.F.R. 1.192(c)(1)]

The real party in interest is Rohm and Haas Company, 100 Independence Mall West, Philadelphia, PA 19106-2399.

#### RELATED APPEALS AND INTERFERENCES [37 C.F.R. 1.192(c)(2)]

There are no other related appeals or interferences that will directly affect or be directly affected or have a bearing on the Board's decision in the pending appeal.

#### STATUS OF CLAIMS [37 C.F.R. 1.192(c)(3)]

The status of the claims is as follows:

Allowed claims	-	none
Claims objected to	-	none
Claims cancelled	-	none
Claims pending	-	1-4
Claims rejected	-	1-4
Claims on appeal	-	1-4

#### STATUS OF AMENDMENTS [37 C.F.R. 1.192(c)(4)]

The rejected claims are set out in Appendix 1.

#### SUMMARY OF INVENTION [37 C.F.R. 1.192(c)(5)]

Appellant claims (claims 1-2)

a method for forming a moisture reactive hot melt adhesive including:

forming a hydroxyl-functional prepolymer by reacting first components including a polyol selected from the group consisting of polyether polyols, polyester polyols, and mixtures thereof, the polyol having a weight average molecular weight of from 250 to 5,000; and  
a polyisocyanate, the ratio of OH/NCO groups of the first components on an equivalents basis being from 1.05 to 3.0;

admixing second components including  
the hydroxyl-functional prepolymer,  
a crystalline polyester polyol, and  
a polyisocyanate, the weight ratio of the hydroxyl-functional prepolymer to the  
polyol being from 9/1 to 1/9, and the ratio of NCO/OH groups of the second  
components on an equivalents basis being from 1.5 to 2.2; and  
reacting, or allowing to react, the admixture.

Appellant also claims (claim 3) a moisture reactive hot melt adhesive formed by  
the method of claim 1 or claim 2 and (claim 4) a method for bonding substrates including  
the step of: forming a moisture reactive hot melt adhesive by the method of claim 1 or  
claim 2.

#### ISSUES [37 C.F.R. 1.192(c)(6)]

The issue is whether the appellant's invention of claims 1-3 is  
anticipated under 35 USC 102(e) by or, in the alternative, is obvious under  
35 USC 103(a) over US Patent No. 6,365,700 to Graham ("Graham"). And  
the issue is whether claim 4 is unpatentable under 35 USC 103(a) over  
Graham as applied above, and further in view of US Patent No. 5,939,499 to  
Anderson, et al. ("Anderson").

#### THE REJECTIONS

Claims 1-3 stand finally rejected under 35 USC 102(e) as being  
anticipated by Graham. Claims 1-3 stand finally rejected under 35 USC  
103(a) as being unpatentable over Graham. Claim 4 stands finally rejected  
under 35 USC 103(a) as being unpatentable over Graham as applied above,  
and further in view of Anderson.

### References Relied Upon by the Examiner

Graham discloses a high green strength reactive hot melt adhesive by prepolymerization of a certain polyester and a di- or poly isocyanate to form a hydroxy terminated prepolymer that is reacted with additional di- or polyisocyanate or optional polyols to produce a reactive hot melt adhesive.

Anderson is directed to a method for applying different hot melt adhesives.

### The Examiner's Arguments

The Examiner asserts that claims 1-3 are anticipated by Graham 35 USC 102(e) because Graham discloses a hot melt adhesive having process features in common with appellants and numerical limitations which generally overlap with those of appellants. The examiner asserts that claims 1-3 are unpatentable over Graham under 35 USC 103(a) because the numerical limitations of Graham could be varied by an ordinary artisan to provide appellant's invention.. And the examiner asserts that claim 4 is unpatentable over Graham as applied above, and further in view of Anderson under 35 USC 103(a) because of the arguments regarding Graham and the method of application of the different moisture reactive hot melt adhesive of Anderson.

### GROUPING OF CLAIMS [37 C.F.R. 1.192(c)(7)]

As to the rejections applied against claims 1-4 under 35 USC 102(e) and 35 USC 103(a), it is appellants' intention for each ground of rejection that the rejected claims stand or fall together.

### ARGUMENTS [37 C.F.R. 1.192(c)(8)]

#### 35 USC 102(e) REJECTION OF CLAIMS 1-3

The examiner rejected claims 1-3 under 35 USC 102(e) as being anticipated by Graham. The examiner points to certain common elements in

Graham but concedes that Graham does not disclose admixing second components including the hydroxyl-functional prepolymer, a crystalline polyester polyol, and a polyisocyanate, the weight ratio of the hydroxyl-functional prepolymer to the polyol being from 9/1 to 1/9. Further, claim 1 (and claims 2-3 which depend therefrom) recites the polyol of the first components as having a weight average molecular weight of from 250 to 5,000. Appellant submits that Graham's disclosure does not provide appellant's invention of claims 1-3 with a sufficient degree of specificity to constitute anticipation under 35 USC 102(e).

Further, the examiner points to Example 2 of Graham as illustrative of an anticipating weight ratio of hydroxyl-functional polymer to polyol; appellant respectfully points out, however, that the polyol used in the first step of Graham's Example 2, DYNACOLL 7361, is indicated (Graham, column 2, lines 19-21) to have a molecular weight of 7000. Appellant's claims 1-3 recite the polyol of their first components as having a weight average molecular weight of from 250 to 5,000. Appellant submits that Graham's Example 2, therefore, is not an anticipating disclosure nor does the examiner point any other specific disclosure of appellant's molecular weight range or its beneficial combination with appellant's weight ratio of hydroxyl-functional polymer to polyol.

Appellant respectfully submits that each and every limitation of his invention of claims 1-3 is not disclosed with sufficient specificity by Graham.

### 35 USC 103(a) REJECTION OF CLAIMS 1-3

The examiner rejected claims 1-3 under 35 USC 103(a) as being obvious over Graham. Appellant traverses because the examiner has not meet his burden of providing a *prima facie* case of obviousness by pointing out any teaching or suggestion within Graham to modify Graham's method or composition to that of appellant. The examiner points to certain common elements in Graham but concedes that Graham does not disclose admixing



second components including the hydroxyl-functional prepolymer, a crystalline polyester polyol, and a polyisocyanate, the weight ratio of the hydroxyl-functional prepolymer to the polyol being from 9/1 to 1/9. Neither does Graham teach or suggest changing the ratio of prepolymer to second component polyol at all and particularly not to the range of ratios claimed by appellant.

Further, claims 1-3 recite the polyol of the first components as having a weight average molecular weight of from 250 to 5,000. Graham discloses molecular weights in the range of 2000 to 15,000 with the best commercially available polyester having a molecular weight of 7,200, but states that “if a lower molecular weight hydroxyl terminated polyester is used, i.e., one with a molecular weight of 3600 ... the viscosity of the resulting prepolymer is too high for efficient mixing...” (Graham, page 4, lines 19-22). Graham therefore points out the inapplicability of a first component polyol molecular weight of 3600 to Graham’s own method and further fails to provide enablement of such a molecular weight in his process, thereby teaching away from the lower molecular weights claimed by appellant.

The examiner further suggests that Graham points toward optimum molecular weights including at least 3,601 to 5,000. There is no support for this supposition within Graham; the inapplicability of a molecular weight of 3,600 falls far short of suggesting that 3,601 would be efficacious – there is no such suggestion within Graham and Graham’s comment that the polyester molecular weight can be too high falls far short of suggesting 5,000 as a possible upper limit, particularly since Graham indicates, as above, that a polyester of molecular weight 7,200 is the best commercially available polyol, and that a molecular weight of 15,000 “will work as well”. Appellant respectfully submits that the examiner is relying on appellant’s own disclosure and thereby reading absent numerical limitations into Graham.

Appellant respectfully submits that Graham provides no teaching, suggestion, or motivation to appellant’s method or composition as claimed.

#### 35 USC 103(a) REJECTION OF CLAIM 4

The examiner rejected claim 4 under 35 USC 103(a) as being unpatentable over Graham as applied above, and further in view of Anderson. The examiner argues that Graham teaches all of the limitations of claim 4 except for a teaching of a method for applying a moisture reactive hot melt adhesive. Appellant traverses, *inter alia*, because the examiner has himself conceded in his rejections of claims 1-3, that Graham does not disclose each and every limitation of claim 1, and claim 2 which is dependent therefrom, which read into claim 4. Further, claims 1-2 and, as argued herein, are not taught or suggested by Graham. Therefore the teachings of Graham cannot be perfected by Anderson which is directed to a method for applying different hot melt adhesives but does not teach or suggest appellants' compositional limitations.

#### Conclusions

Appellants respectfully submit that the present invention as defined by claims 1-3 is not anticipated by Graham under 35 U.S.C. 102(e) because Graham does not disclose each and every limitation of claims 1-3. Appellants respectfully submit that the present invention as defined by claims 1-3 is not unpatentable over Graham under 35 U.S.C. 103(a) because the examiner has not met his burden of establishing a *prima facie* case of obviousness, there being no teaching, suggestion, or motivation within Graham to appellants' invention. Appellants further respectfully submit that the method of the present invention as defined by claim 4 is not unpatentable over Graham as applied above, and further in view of Anderson under 35 U.S.C. 103(a) because Anderson's disclosure does not perfect the shortcomings of Graham, as above.

Appellant respectfully requests the Board to reverse the Examiner's rejections and enter a Notice of Allowance. The Commissioner is hereby authorized to charge any additional fee which may be required, or to credit any overpayments to Deposit Account 18-1850.

Respectfully submitted,

  
RONALD D. BAKULE

Agent for Appellant

Registration No. 32,681

Telephone (215)641-7822

Rohm and Haas Company

Independence Mall West

Philadelphia, PA 19105

DATE: April 2, 2004

## APPENDIX [37 C.F.R. 1.192(c)(9)]

### CLAIMS 1-4

1. A method for forming a moisture reactive hot melt adhesive comprising
  - a) forming a hydroxyl-functional prepolymer by reacting first components comprising a polyol selected from the group consisting of polyether polyols, polyester polyols, and mixtures thereof, said polyol having a weight average molecular weight of from 250 to 5,000; and a polyisocyanate, the ratio of OH/NCO groups of said first components on an equivalents basis being from 1.05 to 3.0;
  - b) admixing second components comprising said hydroxyl-functional prepolymer, a polyol selected from the group consisting of polyether polyols, polyester polyols, and mixtures thereof, and a polyisocyanate, the weight ratio of said hydroxyl-functional prepolymer to said polyol being from 9/1 to 1/9, and the ratio of NCO/OH groups of said second components on an equivalents basis being from 1.5 to 2.2; and
  - c) reacting, or allowing to react, said admixture.
2. The method of claim 1 wherein said second components comprise said hydroxyl-functional prepolymer, a crystalline polyester polyol, and a polyisocyanate, the weight ratio of said hydroxyl-functional prepolymer to said polyol being from 9/1 to 1/9, and the ratio of NCO/OH groups of said second components on an equivalents basis being from 1.5 to 2.2.
3. A moisture reactive hot melt adhesive formed by the method of claim 1 or claim 2.
4. A method for bonding substrates comprising

forming a moisture reactive hot melt adhesive by the method of claim 1 or claim 2;

heating said hot melt adhesive to a temperature of 90 °C to 140 °C ;

applying said heated hot melt adhesive to a first substrate in the presence of moisture;

contacting said applied heated hot melt adhesive with a second substrate; and

cooling, or allowing to cool, said adhesive.